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Adm
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Record Keeping For Hog Producers

Tax and Financial Management Records

by David Bache

INTRODUCTION

Tax and financial management records are quite different in scope and purpose from the swine enterprise records discussed in other publications of this series. Some reasons for the differences are:

- Since the records discussed here deal with tax and financial management, they must cover the entire business organization. On most farms there will be enterprises other than hogs. In addition, because most hogs are produced on family farms, these records often include personal as well as business transactions.
- The individual producer will want to exercise discretion in choosing the frequency, timing, and content of swine enterprise reports. But, for tax and financial management reports, these decisions are largely in the hands of state and national revenue services and lending institutions. The task of the producer is to develop accurate, verifiable data to generate the required tax and financial reports.
- Expert help (tax practitioners, public accountants, lawyers, loan officers) is available and widely used in the preparation of tax and financial management reports. For instance, it has been estimated that 80% of U.S.

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farmers use a consultant to help with income tax preparation.

Tax and financial management records include information and reflect concerns outside the swine enterprise. Still, you must consider these records carefully and early in developing a comprehensive record system. One set of records found on every farm is the one on which income tax payments are based. The development of a record system usually begins with the tax records and evolves from there. Therefore, the collection forms for tax records are a logical source of data for many of the calculations discussed in other publications of this series. The hog producer should see that the data recorded for tax and financial management are adequate for swine enterprise reports as well. In choosing or designing recording forms or record books or computer software, make certain the system can handle number and weight as well as value of animals sold and purchased. Be certain also that your system is able to monitor the quantity of feed, fuel, electricity, labor, etc.

There is no intent here to present a discussion detailing tax and financial accounting. The purpose is to give some guidance in choosing the features of an accounting system, especially as those features interplay with the hog enterprise.

TAX ACCOUNTING

This discussion of tax accounting is concerned mainly with the income tax. This is not to minimize the importance

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Record Keeping for Hog Producers

The development of this series of publications was made possible by special project funding from the United States Department of Agriculture--Extension Service. The ideas presented here have been developed through close cooperation among the national extension service, the state universities, and the pork production industry. Errors and oversights are the responsibility of the primary authors.

This publication is one of six in a series, each designed to be a self-contained unit. Yet the relationship between this and the other five publications is of critical importance. Each publication (section) in the series is identified by a Roman numeral for purposes of reference back and forth among the six subject areas. Tables, exhibits, recording forms and reports also are identified with a combination of Roman and Arabic numerals. For instance, Table VI-1, Performance Measure for the Swine Herd, is the first table in EC-601 (section VI); it is found in that publication although it may be referred to in others. EC-602 consists of blank recording and report forms for your own operation.

of other tax records including:

- 1) Earnings subject to the self-employment tax for social security.
- 2) Withholding and deposits of social security (FICA) and federal unemployment (FUTA) for employees.
- 3) For the estate tax, documentation of ownership and material participation; cost basis of purchased assets; value established at probate on inherited property; the donor's basis on gifted property; and for all assets, the timing and value of improvements and the records of depreciation.

The federal income tax is a major item of expense on most farms. To minimize taxes within the limits of the law and other management concerns is one of the important goals of each hog producer. Exhibits II-1 and II-2 are designed to illustrate the flow of farm business information to Form 1040 for the calculation of income tax liability. These exhibits and the following discussion are meant to provide some appreciation for the mechanics of tax accounting and of the consequences of inaccurate and uninformed reporting.

Most taxpayers assume responsibility for gathering the data necessary for preparing the various income tax forms (see the top half of Exhibits II-1 and II-2 labeled, "Your Records"). To do this, taxpayers must be familiar enough with the tax rules to know what data are required and how they must be categorized. At a minimum, each farmer should understand Exhibits II-1 and II-2 and be a student of Internal Revenue Service Publication #225, Farmer's Tax Guide.

Examine Exhibits II-1 and II-2 and read the following brief description. Ask yourself if your records will supply the information necessary for complete and accurate tax reporting.

Exhibit II-1

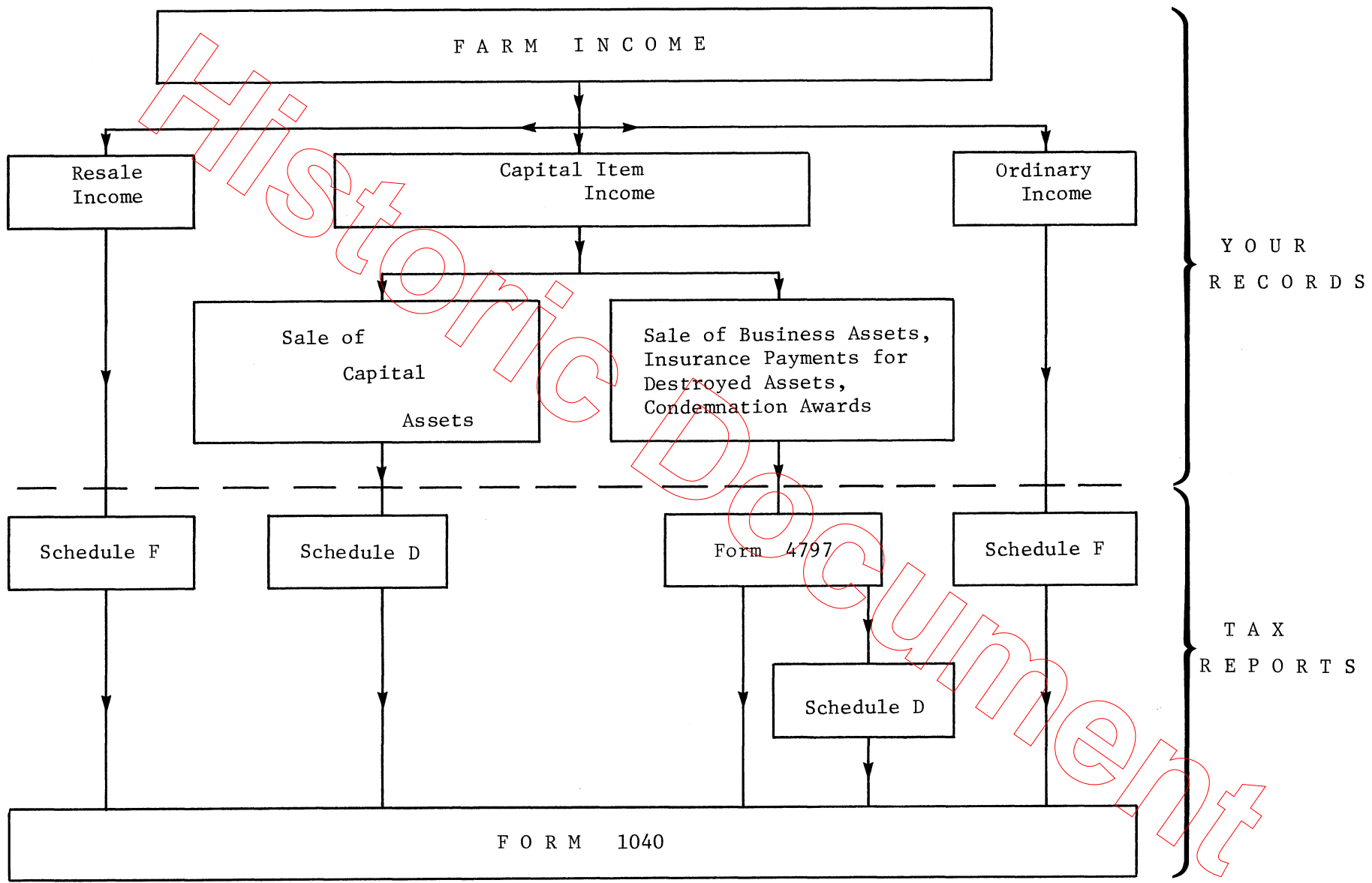
The record system must permit the taxpayer to report income in three categories: 1) "Resale income"-- for the hog

producer, the important items here are likely to be income from marketings of pigs purchased as feeders. 2) Income from the disposal of "Capital Items" -- there is an attractive reward for reporting all qualifying sales in this category since only 40% of the income from long term capital gains is taxed. 3) "Ordinary Income."

"Capital Item Income" is divided into two categories: 1) "Capital Assets" are items on which depreciation is not claimed as a business expense. Examples are a personal residence, stocks and bonds, commodity futures contracts held for speculation, household goods, and personal automobiles. Gains or losses on these items find their way to the final tax calculations through "Schedule D" where they are classified long term or short-term with important tax consequences. 2) The "Sale of Business Assets" includes real and depreciable property used in the business. It also includes income from the sale of raised breeding animals. These are not depreciated because the costs of raising them will already have been claimed as expenses. Income from sale of these assets is first reported on Form 4797. The purpose of Form 4797 is to determine the amount of gain qualifying as long-

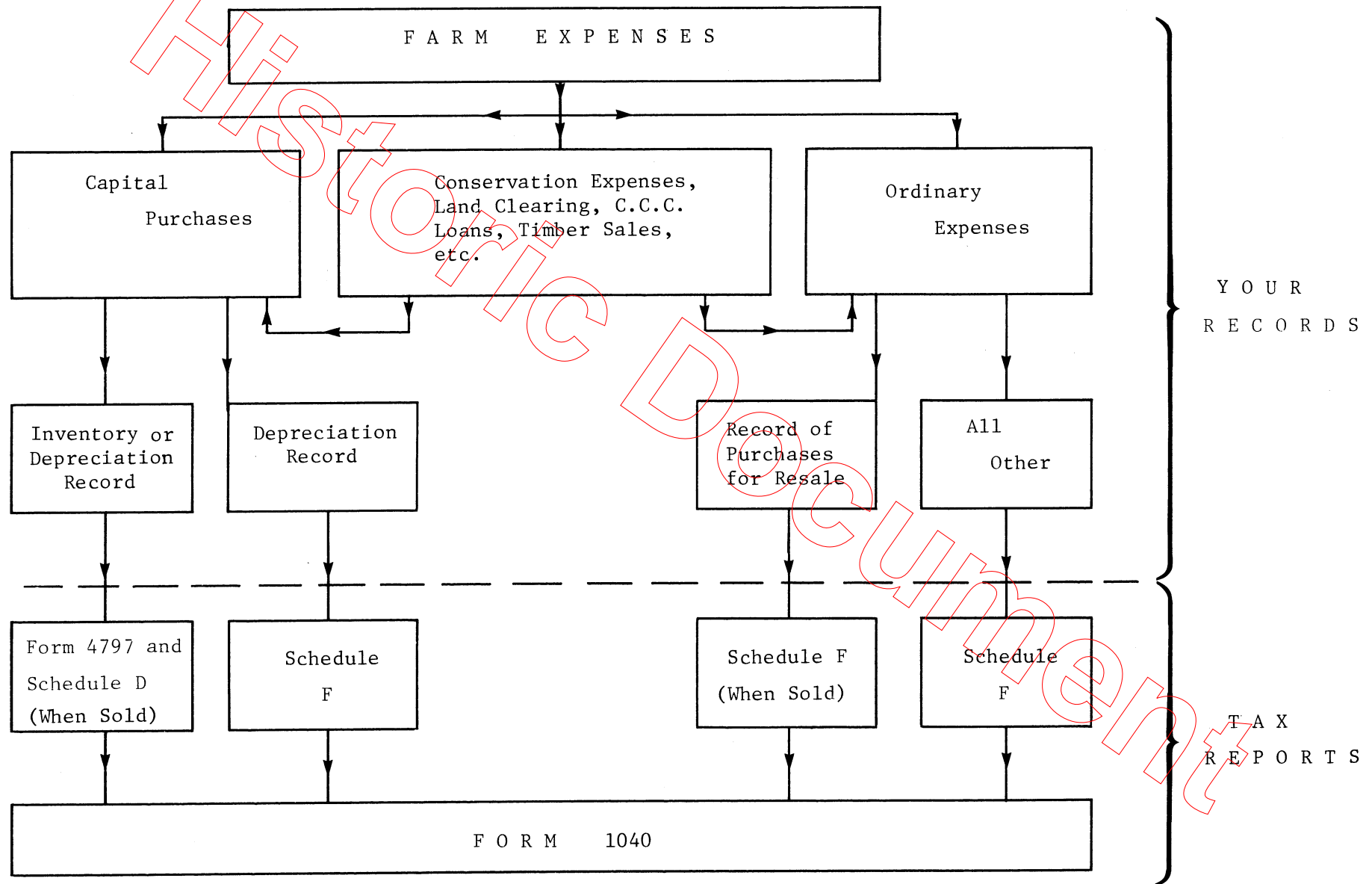


The "sale of business assets" includes real and depreciable property used in the business. It will also include income from the sale of raised breeding animals which are not depreciated.



/1 Adapted from a diagram in Teaching Guide for Farm Records, a mimeograph prepared by R. A. Luening, University of Wisconsin

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Exhibit II-2 Flow of Expense Information to Income Tax Reports



term capital gain. To do this, the total depreciation allowed over the life of these "Business Assets" must be examined. For most items a hog producer would depreciate (breeding livestock, equipment, and any buildings classified "single purpose livestock structures"), a share of the gain equal to allowed depreciation must be treated as ordinary income. Only the gain which exceeds allowed depreciation receives the capital gain deduction.

Exhibit II-2

Farm expense must be divided into two categories: "Capital Purchases" and "Ordinary Expenses." There is a third group of expenditures (Conservative Expenses, etc.) for which the taxpayer has a choice. He can decide either to cash them out or to capitalize them.

"Capital Purchases" find their way into the tax calculations during their depreciable life through the "Depreciation Record" and "Schedule F" according to the rules for cost recovery (depreciation). If an item is traded, its undepreciated value is not lost as a business expense. The undepreciated value is added to the cash difference (boot) paid for its replacement, and the cost recovery rules are applied to the total. (For example: A farmer trades a tractor which has an undepreciated value on his books of \$1,500. He pays a cash difference of \$8,500 for a new tractor. The basis for depreciation of the new tractor is \$8,500 plus \$1,500 or \$10,000.) When an item is sold for cash or discarded, gain or loss is reported through Form "4797 and Schedule D."

Since most farmers choose to report on the cash basis, their required records do not include an inventory. For them, the depreciation schedule will provide the only record for calculating gain or loss when a capital item is sold.

Except for the cost of items purchased for resale, all "Ordinary

Expenses" will be reported directly to "Schedule F." For the hog producer, the important items purchased for resale will be feeder pigs. Do not report the cost of those until they are sold.

Some Important Tax Accounting Issues

A few of the tax reporting errors commonly committed by hog producers will be described. Questions will be used to guide you in relating the problems to your business. An estimate will be given of the cost in increased taxes resulting from faulty reporting. In each case, suggestions for avoiding the errors will follow.

1. Do you have a complete record of expenses? If you are paying taxes at the 22% rate (\$16,000 taxable income on a joint return in 1982), the failure to record an \$80.00 cash purchase of a repair part will add \$17.60 to your tax bill.

To minimize errors in the cash account, deposit all farm income into a checking account and make all payments from that account. Further, you should do your best to enforce a strict separation between personal and business accounts. Periodically write a check from the farm business account for deposit in the personal account. The business account should not pay any personal expenses nor receive any personal income.

2. Is hog income divided into the necessary tax categories?

--If you buy feeder pigs, does your system insure that every dollar spent for pigs is charged as an operating expense? Do you report the cost of pigs that die? If you pay taxes at the 22% rate and you fail to report the purchase expenditure for 10 pigs that cost \$40 per head, you will pay Uncle Sam \$88 more than necessary.

The cost of feeder pigs cannot be reported as an expense until the

finished hogs are sold. So the record system of a feeder must provide for special handling of recordings of pig purchases. Purchase information must be recalled months later at sale time. When pigs are purchased in one tax year and sold in the next, information must be brought together from two accounting periods. If he has provided for the storage and easy retrieval of these data, the feedlot operator on an all-in, all-out basis should have no further problems.

However, when a feedlot is run with a stream of animals flowing through the system, the operator is unlikely to know the purchase price of any particular pig going to market or when all of a particular group of purchased pigs is gone. If hogs are so intermingled that they cannot be identified with a specific purchase, the Internal Revenue Service permits the use of a simplifying assumption: first-in, first-out. According to that assumption, the first pigs bought will be the first sold.

The first-in, first-out assumption eliminates the need to keep track of individual animals or of groups. But it does not deal with the problems of pig death, theft or disappearance.³ A first step is to record mortality. Then report dead pigs on your farm income record as having been purchased at the price of the oldest pigs on hand and then sold for zero dollars. In addition, the manager should stop periodically (perhaps once a year is often enough) to calculate the number of pigs that have disappeared and to report their purchase price as an expense. To calculate the number lost, a physical inventory is necessary. Then: (pigs in beginning inventory + purchases) minus (sales + recorded mortality + ending inventory) = number disappeared.

Recording Form II-1 has been designed to solve the problem of keeping track of the purchase cost and income from pigs purchased for resale. Sample data illustrate the use of the form. Eight of the example pigs died. All deaths were in calendar year 1981; all sales in 1982. The taxpayer reported the purchase price of the eight dead pigs as a 1981 business expense.

--Are sales of breeding animals separated from other income for capital gains treatment? This is a major tax break for most hog farmers who produce their own breeding herd replacements. The advantage is diluted for those who do their tax accounting on an accrual basis and in the calculation of corporate taxes.⁴ If you are a cash basis individual taxpayer paying at the 22% rate, you can reduce the tax on the \$150 income from the sale of a raised sow from \$33.00 to \$13.20 by reporting properly.

Sales of raised breeding animals kept for at least 12 months are reported as capital gains income. In most situations, any raised gilt that has farrowed has been held for 12 months (is a year old). She qualifies for the 60% long term-term capital gain deduction. This is an especially powerful tax advantage for the cash-basis taxpayer. The basis for raised breeding animals is zero, permitting every dollar of income to be treated as capital gains. Only 40 cents of each dollar received from the sale of such animals is taxable.

Sales of purchased breeding animals are also subject to the 12-month rule to determine whether gains qualify for the long-term capital gains deduction. However, the tax-saving opportunities are much more modest than with raised breeding animals. The reason is that the basis for calculating gain for these is

³ See Recording Form VI-6, Inventory Control and Mortality in Nursery and Growing-Finishing, in EC-601.

⁴ 1982 U.S. Master Tax Guides, Commerce Clearing House, Inc., 4025 W. Peterson Ave., Chicago, IL, page 339.

Group Description: 200 YORK-HAMP CROSS from Osgood

PURCHASE INFORMATION

Check No	Date	Total Cost	Number	Total Weight	Per Head	
					Weight	Cost
1026	11-30-81	\$ 7200. ⁰⁰	200	9000 #	45 #	\$ 36. ⁰⁰

SALE INFORMATION

Invoice No.	Date	Total Amount of Sale	Number		Total Weight	Purchase Cost	Number Left	Remaining Cost
			Died	Sold				
—	Dec. 3	\$ —	3	—	—	\$ 108. ⁰⁰	197	7092. ⁰⁰
—	Dec. 6	\$ —	1	—	—	\$ 36. ⁰⁰	196	7056. ⁰⁰
—	Dec. 8	\$ —	2	—	—	\$ 72. ⁰⁰	194	6984. ⁰⁰
—	Feb. 6, 1982	\$ —	2	—	—	\$ 72. ⁰⁰	192	6912. ⁰⁰
0723	MAR. 3	\$ 6214. ⁵⁶	—	60	12,840 #	\$ 2160. ⁰⁰	132	4752. ⁰⁰
0831	MAR. 17	\$ 6553. ⁴⁴	—	60	13,320 #	\$ 2160. ⁰⁰	72	2592. ⁰⁰
0876	MAR. 24	\$ 6621. ¹⁰	—	60	13,080 #	\$ 2160. ⁰⁰	12	432. ⁰⁰
0930	MAR. 31	\$ 1233. ¹⁵	—	12	2,376 #	\$ 432. ⁰⁰	0	000. ⁰⁰
Totals		\$ 20,622. ²⁵	8	192	41,616 #	\$ 7200. ⁰⁰		

not zero. Instead, basis is the cost of purchased animals minus depreciation. The potential tax saving is further diluted because depreciation will be recaptured on Form 4797. That is, gain will be treated as ordinary income so long as it is less than depreciation allowed or allowable. Only when cull breeding animal sells for more than its purchase price will there be gain subject to the 60% deduction. However, the new accelerated cost recovery rules allow you to ignore salvage and to depreciate purchased breeding animals much faster than they actually lose value. Therefore, the important tax management consideration with purchased breeding animals will involve depreciation and investment credit.

3. Do you review, edit, and correct your depreciation schedule? The record of depreciation is commonly neglected and, consequently, is often inaccurate. Cost recovery (depreciation), as the name implies, is the method by which a hog producer is permitted to claim the cost of property (usually facilities and breeding stock) with a useful life of more than one year. Oversights are not forgiven in claiming depreciation. If you do not make the cost recovery claim in the year in which you were entitled to it, you have lost that claim. A \$100 error is claiming a cost recovery (depreciation) deduction will cost somewhere between \$10 and \$50, depending on the tax bracket. Unfortunately, if the property is sold, the unclaimed depreciation will penalize you again in the calculation of depreciation recapture on Form 4797.

--Do you notify your tax person when a boar that you are depreciating dies, or a piece of equipment is destroyed? If you fail to do this, the consequence at best will be that you claim the purchase expense with the slower depreciation procedures rather than immediately as a capital loss. You may also, illegally, fail to recognize an investment credit recapture. Finally, you may fail completely to

report as an expense the amount that you set as "salvage value"⁵ when you began depreciating. A \$100 salvage value listed on your depreciation schedule for an item that is "long gone" may as well be transformed into a tax deduction.

--If you purchased 80 gilts to be added to your breeding herd, would your system permit you to accurately calculate Investment Credit, Depreciation, Capital Gain, Capital Loss, Ordinary Income? If not, you would either be paying too much tax or you would be vulnerable to penalties in the event of a tax audit. The tax-saving possibilities are considerable. For instance, if gilts cost \$250 apiece, 80 would cost \$20,000. The gilts would be three-year property under the Accelerated Cost Recovery System and would qualify for a 6% investment credit. The credit would be \$1,200, which has an effect equal to a direct discount on the price of gilts.

The typical hog farmer tends to neglect his depreciation schedule because the calculations are complex and tedious. Many producers have delegated the responsibility for calculating depreciation to a tax consultant or a farm record service. However, the problem remains because the producer often fails to perform those tasks that only he can perform: review, edit, correct.

Maintaining the depreciation schedule is likely to be a growing problem for most hog farms. The 1981 revision of the federal income tax law provides for more rapid depreciation, more liberal rules for investment credit, and the elimination of salvage values. All of these changes will encourage hog

⁵ For items placed in service after 1980, you will use the Accelerated Cost Recovery System which does not recognize salvage value. See Farmer's Tax Guide for 1981, Internal Revenue Service Publication 225, page 16.

producers to capitalize (depreciate) items rather than expensing them. Depreciation schedules will probably grow longer and longer.

The challenge to the hog producer is to use his depreciation records to perform the following functions:

--Provide for accurate and timely calculation of the cost recovery (depreciation) allowance which is charged as an annual expense.

--Monitor the investment credit claim against the actual working life of the asset. This way the investment credit can be repaid if the item in question does not last as long as you had estimated.

--Identify depreciable items that have died or been discarded or sold so capital gains, capital losses and/or ordinary income can be calculated and reported.

The first step to insure the three functions will be performed is to adopt rigorous editing rules: has every newly purchased item been added to the depreciation schedule? Have sold or discarded items been removed from the list? Has any remaining value in such items been either claimed as an expense or added to the depreciable basis of a replacement? Are descriptive labels adequate to provide positive identification now and over the life of each independent item and each improvement? Can improvements be associated with the item improved to establish the basis of the unit in case of sale of the farm, gifting, etc?

Having adopted an editing procedure, a good second rule is to allocate a line on the depreciation schedule to each item, including each purchased breeding animal. Then, at the time of disposition, the necessary information would be available to calculate investment credit recapture and to report ordinary income and capital gains. However, allocating

a separate line to each item becomes burdensome. For instance, you must treat each purchased sow and boar as an individual with permanent identification. And, if there are a large number of animals involved, you almost need electronic data processing to prepare the depreciation schedule. (Visualize the depreciation schedule for a 500-sow unit where all females are purchased and one-third of them are replaced yearly.)

RECORDS FOR FINANCIAL MANAGEMENT

One of the repeating themes in this series is that the records which will prove to be needed and useful will vary from farm to farm. Therefore, each producer should try to make intelligent decisions about where to place his record-keeping emphasis.

The tax rules already discussed establish the minimum set of records: a cash journal, a capital account (depreciation schedule), and, for those few who pay their taxes on the accrual basis, an inventory. For business and financial management, some additions to the basic tax records are needed. Following is a list of questions to help you evaluate your interest in these issues:

1. Do you foresee problems in borrowing money? You and your lender need proof of profitability and of adequate cash flow that tax records may not provide.

2. Have you incorporated your farm business or do you intend to do so? Some farm corporations are obliged to do their tax accounting on an accrual basis. All are subject to more rigorous accounting rules than are sole proprietorships.

3. Can you gain from a comparison of profitability with other farms like yours or with your own farm over time? If so, you need to adopt accounting rules that are consistently applied to your data and which are reasonably

consistent with the rules followed by those with whom you want to compare.

4. Do you need to evaluate the financial performance of your business: net worth growth, sources of wealth, retained earnings, consumption expenditures?

5. Would you gain from built-in checks on the consistency and accuracy of your records? More sophisticated accounting programs include such controls (error traps!).

Exhibit II-3

This diagram is intended to show the origin and flow of information from farm records into generally recommended financial statements.⁶ The financial statements are represented by circles in the center of the diagram. The source records are represented by rectangular boxes lined up on the left and right.

The "Net Worth Statement" or Balance Sheet is a listing of what is owned and what is owed at a point in time. A Net Worth Statement is prepared at the beginning and then at the end of each accounting period. A comparison of beginning and ending shows whether the business is better or worse off and by how much.

The "Statement of Change in Financial Position" explains the changes in various components of the Net Worth Statement. This is a new statement for most agricultural lenders and farmers. However, since 1971 it has been required of businesses that follow the professional accountant's "generally accepted accounting principles."

The "Income Statement" measures net income during an accounting period. The ingredients for a fundamental accuracy check are being assembled. The Net Worth Statements show financial position at the beginning and end. The Income Statement and the Statement of Change in Financial Position show what happens between net worth statements. Change in net worth (between net worth statements) must equal net income (from the income statement) plus or minus gifts and inheritances less net withdrawals (both from the statement of change in financial position).

"Cash Flow" is a record of the flow of funds through the business. In financial management, its important use is as a base for predicting the future flow of cash. Predicted cash flow is a critical test of the feasibility of a financial plan.

From a study of Exhibit II-3, certain things should be obvious. For instance:

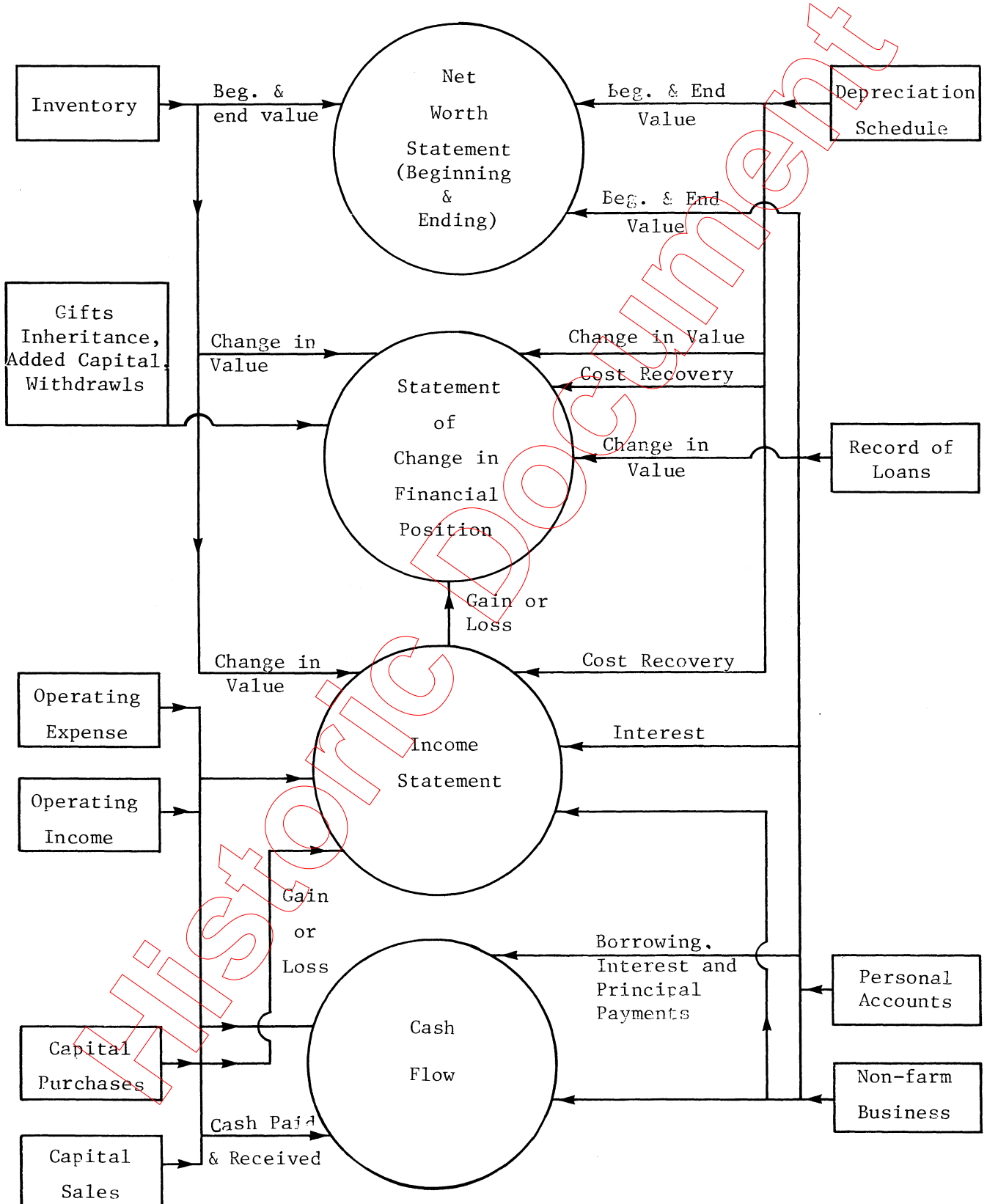
1. Although an "Inventory" is not required of a cash-basis taxpayer, it is necessary for the preparation of three of the four recommended financial statements and for any meaningful measure of profitability. So it will be critical in dealing with your lender and in managing your business.

2. If you want to employ the fundamental error check developed by the accounting profession, you need a record of the sources of outside capital and of the withdrawal of capital from the business.

3. Different information from some "Record of Loans" is required for each of the four recommended financial statements. When borrowings of a typical producer were less important and came from a single source, it was usually satisfactory to depend on the lender to provide such records. Most producers should now accept responsibility for keeping their own Record of Loans.

⁶The statements described here are those developed by Frey and Klinefelter in Coordinated Financial Statements For Agriculture, published by Agri Finance, 5520 W. Touhy Ave., Skokie, IL 60077.

Exhibit II-3 Flow of Information to Financial Statements



4. Since depreciation is not a cash expense, it does not affect the Cash Flow statement.

The Changing Accounting Environment

Cash Versus Accrual Accounting.

Although the accrual method of accounting is required for certain corporations,⁷ most hog farmers have the option of calculating their taxes on the cash basis. Most use the cash basis of tax accounting for several good reasons: 1) cash accounting is easier; 2) there is great flexibility in shifting income and expenses between years to avoid income variation and a resulting higher tax bill; 3) there is the opportunity to avoid for a period of years (often a work lifetime) reporting income retained in the business in the form of increasing inventories of feed, grain, livestock, some land improvements, etc.; 4) there is a lower tax liability from the sale of raised breeding animals. This last advantage results from the total sale value of raised breeding livestock being eligible for capital gains treatment. The basis for calculating capital gain is zero with the cash basis; it is the inventory value with the accrual.

These advantages of cash-basis tax accounting are so important for hog producers that there is no reason to expect any voluntary shift to the accrual method. But the cash-basis taxpayer must assume responsibility for curing some of the failings of a minimal cash-basis record system. Some of the failings are: lack of inventory; inability to measure business performance or financial progress; absence of accuracy checks provided by more sophisticated accounting procedures.

Increasing Contacts with Professional Accountants. There is increasing contact between hog producers and the

accounting profession as hog production units grow larger, as they make greater use of borrowed funds, and as they adopt more complicated business structures. At the outset, both farmer and accountant are likely to be frustrated as they attempt to work together.

The farmer's records typically include a single-entry system of recording revenue and expenditures, a depreciation schedule, and a series of net worth statements. The net worth statements are often casually prepared from memory in response to a lender's request.

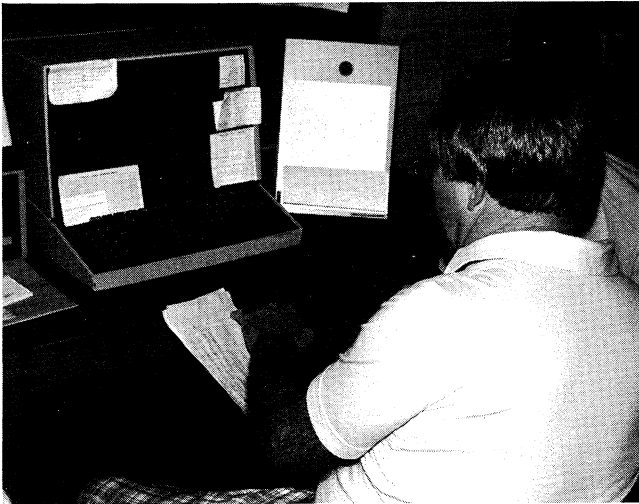
In contrast, the accountant is trained in the use of double-entry accounting which results in the automatic preparation of a net worth statement (and other financial statements) whenever the books are closed. The double-entry system provides an automatic accuracy check to assure all transactions are recorded; it monitors the effect of each transaction on the net worth statement. You cannot complete an audit until there is a reconciliation between the net worth statement and the income statement: beginning net worth plus net income minus withdrawals must equal ending net worth.

Not all farmers will or should adopt double-entry accounting. But there is a serious discrepancy between the information generated by most single-entry accounting systems and the information needed for business and financial management. Here are two ways to solve the problem.

1. Many of the financial record computer software packages offered to farmers are prepared for non-farm businesses. Most of these are programmed as double-entry systems. The computer is told to insist upon counteracting debit and credit entries before the recording of a transaction is complete. It has been given the rules for double-entry accounting. So some hog farmers will

⁷ Farmer's Tax Guide, Internal Revenue Service Publication 225, op. cit.

have the opportunity to move directly to double-entry accounting through computerized systems. Their concern should be with the ability of the system to handle the desired hog enterprise information (number, weight, etc.) as well as the financial information the accountant and the lender need.



The computer is told to insist upon counteracting debit and credit entries before the recording of a transaction is complete. It contains the rules for double-entry accounting.

2. Several excellent systems are available to help the farmer construct the required financial statements without forcing him to adopt double-entry accounting. Exhibit II-3 illustrates the problem. Examples of some available systems are:

Coordinated Financial Statements for Agriculture, by Thomas Frey and Danny Klinefelter, Copyright 1978 by Agri Finance, Suite G, 5520 Touhy Ave., Skokie, Illinois 60077.

Managing Your Financial Future, a comprehensive accounting system which uses three books: Book 1, Farm and Home Record Book; Book 2, Farm Business Analysis and Cash Flow Plan; Book 3, Inventory and Depreciation Schedule Record Book. These were developed by R.A. Luening and A.J. Brannstrom of the University of Wisconsin and D.E. Welsch, R.O. Hawkins, and K.H. Thomas of the University of Minnesota. This set of

books represents the official farm record system for the State of Wisconsin. It is distributed by The Richland Observer, P.O. Box 31, Richland Center, WI 53581.

Managing Your Farm Financial Future, North Central Regional Extension Publication #34, by K.H. Thomas, R.O. Hawkins, R.A. Luening, and R.H. Weigle. Distributed by Agricultural Extension Service, University of Minnesota, St. Paul, MN 55108.

The Growing Problem of Asset Valuation. Continuing inflation and continuing liberalization of the rules for depreciation (cost recovery) have created a situation which will force many farmers to maintain two different sets of information to use in establishing Net Worth. An example will illustrate the problem: The 1981 Internal Revenue Service rules for cost recovery lead a hog farmer to classify a new unitary hog production facility as a five-year asset. The useful life of such a facility is probably 15 years, but the new rules for cost recovery have abandoned the "useful life" concept and ignore salvage value. So the cost or unrecovered tax basis is reduced to zero over five years for the new facility. The producer faces the prospect of having his five-year-old hog facility show up on his net worth statement as an item with zero value.

In placing values on his assets and liabilities, the farmer faces conflicting demands from his lender, his accountant, and the Internal Revenue Service, and in response to his own interests as a farm manager.

1. The lender wants a market value net worth which will show what would be left if all assets were sold and all debts paid.

2. Traditional accounting requires cost basis valuation (cost minus depreciation). This permits the reconciliation described earlier between the income and net worth statements.

3. The IRS demands taxpayers abide by the rules of cost recovery and depreciation.

4. The farm manager should identify the source of net worth growth. did it come from inflation or from earnings retained in the business?

A solution which is increasingly appropriate is a double column net worth statement⁸ which lists cost basis values and market values side by side.

The Need for Error Traps

Records are subject to errors. A good record system will have built-in procedures to reduce the number of errors and other procedures (error traps) to catch ones you have made.

Some error traps are suggested in other sections of this publication. For instance:

1. In EC-598, Cost of Production Records, a procedure is recommended for trapping errors in the feed account. To do this, a "Home Raised Feed Check Sheet" (Recording Form III-6) is used to estimate the consumption of feed produced at home. This estimate is then compared to other records of the amount of feed processed. In effect, two different procedures are used to estimate the same quantity. If the estimates do not agree, you have an error or an unexplained loss.

2. Both in EC-598, Cost of Production Records, and in EC-600, Records for Inventory Control, Communication, and Scheduling, an animal count error trap is recommended. (Beginning inventory + births + purchases) must equal (Ending inventory + deaths + sales); otherwise, there is an error or an oversight.

Well-designed error traps are important features to be looked for in choosing a record system or in designing your own. The extra value of a record system which avoids errors is difficult to assess. Here is a real-life example to illustrate the potential savings.

A hog farmer had been in business approximately eight years when he decided in 1980 to hire an accountant and to shift from a single-entry system to a journal-ledger, double-entry accounting system. The accountant insisted upon a cost-basis net worth statement. With this the accountant could employ the check (described in the next paragraph) between net farm income and net worth growth. In developing the statement, they discovered a \$51,000 discrepancy between net worth growth and the eight-year total of net farm income.

In effect, the farmer was overstating his taxable income at the rate of about \$6,500 per year. They discovered about \$21,000 in depreciation schedule oversights and errors. They were unable to uncover the other \$30,000 in errors made over eight years. With the new system and a yearly check, they are confident that, when errors are made, they will be detected and corrected.

A group of important error traps to consider in evaluating an accounting system are listed and described here:

Profit - Net Worth Change Check. The classic example of an error trap is one which is an integral part of double-entry bookkeeping and has already been mentioned several times in this section:

⁸ For instance, see Coordinated Financial Statements in Agriculture, Frey and Klinefelter, op. cit.

Exhibit II-4. Check of Profit Against Net Worth Change

Beginning Net Worth (cost basis)
 + Net Income
 + Gifts and Inheritance
 + Additions to Paid-in Capital
 = Total Available
 - Net Withdrawals
 = Ending Net Worth (cost basis)⁹

⁹ This formula is from Coordinated Financial Statements for Agriculture, Frey and Klinefelter, op. cit.

Your records must let you proceed through this series of calculations to get from beginning to ending net worth. Otherwise, there is an error, or an omission, or an inconsistency.

For the farmer keeping traditional single-entry farm accounts, the procedure for making an equivalent check is provided in both North Central Regional Extension Publication 34 and the Wisconsin farm account book, Managing Your Financial Future. Complete references to these have been listed earlier.

Checking Account Reconciliation. It was recommended earlier that all receipts and disbursements be processed through the checking account. This will leave a complete set of audit tracks which you can follow later. Do not pay cash! Do not net-out deposits! For instance, you may be tempted to avoid making a deposit and writing a check by keeping back a farm receipt to cover family expenses. Don't do it!

Then, each month follow through the procedure recommended by your bank to reconcile your checkbook with the bank statement. This is the way to trap errors in transcription, omission, or arithmetic made by you or your banker.

With some computerized farm record systems, transcription and arithmetic

errors are reduced by automation. For instance, with some microcomputer software packages, one keyboard entry results in the printing of a check and all the necessary recording of that transaction. And with some mail-in record systems, a carbon copy with all the necessary information is prepared whenever a check is written. This carbon copy is mailed to the data processing center.

Cash Balance Accuracy Check. With a formal double-entry accounting system, there is a built-in check on the validity and accuracy of cash income and expense entries. However, with the traditional single-entry system used by most farmers, there is no such check.

Exhibit II-5. Cash Balance Accuracy Check

The total of "Cash Inflows" must equal "Cash Outflows."

Cash Inflows

1. Beginning checkbook balance
2. Income from sale of purchased pigs or other "items held for resale"
3. Income from sale of capital items
4. Other farm operating income
5. Money borrowed
6. Transfers to the farm account from a nonfarm business or from savings, gifts, inheritance, etc.

Cash Outflows

1. Ending checkbook balance
 2. Payment for purchased pigs or other "items held for resale"
 3. Capital purchases (if borrowed money is used, include the loan on line 5, above)
 4. Payments to labor and withdrawals for family living and saving
 5. Farm operating expenses
 6. Payment on debt (interest will appear either here or on the line above as a "Farm Operating Expense")
-

Assume that a single-entry account keeper has a set of records that permit him to calculate his federal income tax liability with some accuracy. That is, he has the records necessary to make the division of receipts and expenses indicated in Exhibits II-1 and 2. Such a producer has separate records of: expenditures for and income from items held for resale; sale and purchase of capital items; ordinary income and expense. He is likely to have separate places to record borrowings and payments on debt, and labor expenses. How can he assure himself that all of these income and expense items are accurately posted to his farm records? The answer is a Cash Balance Accuracy Check like that shown in Exhibit II-5. Make this check monthly after completing a checkbook reconciliation.

Depreciation Schedule Error Trap. To trap errors made in the calculation of depreciation, subject the depreciation data to the test shown in Exhibit II-6. Do this after making the depreciation calculation for income tax filing. For depreciation purposes, most record

Exhibit II-6. Depreciation Schedule Error Trap

The figures on lines 3 and 7 must be equal.

1. Beginning undepreciated (tax basis) value of all items on the depreciation schedule,
 2. Purchases - boot only
 3. Total to account for (1 + 2)
-
4. Ending undepreciated (tax basis) value of all items on the depreciation schedule
 5. Depreciation claimed (special and regular)
 6. Remaining depreciable value at time of disposal of any items sold for cash or destroyed.
 7. Total Accounted For (4 + 5 + 6)
-

keepers will maintain separate lists of machinery and equipment, buildings and improvements, and breeding livestock. For ease in tracking errors, apply the test in Exhibit II-6 to each list.

Liabilities and Loan Record Error Trap. To trap errors in the liabilities section of the net worth statement and in the record of loans, subject the data to the test in Exhibit II-7.

Exhibit II-7. Liabilities and Loan Record Error Trap

The figures on lines 4 and 8 must be equal.

1. Beginning liabilities (from net worth statement)
 2. New money borrowed
 3. Increase in accounts payable
 4. Total to Account For (1 + 2 + 3)
-
5. Ending liabilities (from net worth statement)
 6. Principal payments on debt
 7. Decrease in accounts payable
 8. Total Accounted For (5 + 6 + 7)
-

Reasonableness Test for Prices, Weights, and Yields. It is especially easy with a computerized system to trap some glaring recording errors. This works when there are at least two values (e.g., price and quantity, or number and weight) involved in the entry.

For instance, a producer might misplace a decimal point and report the sale of 24 hogs weighing 5,640 lb. for \$31,020.00. A computer can be programmed to calculate price per unit (\$5.50 per lb. in this case), to check that price against a reasonable range of prices (perhaps 25¢ to 70¢ for market hogs), and to flash a warning signal if the price is outside the reasonable range.

Cash Flow Records and Projections

A cash flow record (see the columns labeled "Actual" in Exhibit II-8) is simply a record of the flow of cash into and out of the business. It will include many items excluded from income tax reports: 1) capital expenditures, 2) the amount of borrowing and the principal payments on debt, 3) money from gifts, inheritance, and savings transferred into the business, 4) family living expenses and withdrawals from the business for nonfarm investment, 5) the purchase cost of feeder pigs to be sold next year. In addition, a cash flow record will exclude that important tax item, depreciation.

A double-entry accounting system automatically monitors the cash account. Many computerized record systems, both single and double-entry, provide for the development of reports on cash flow. But the typical farmer making entries by hand into a single-entry record book must add another step to his record keeping chores to develop a record like that suggested in the columns labeled "Actual" in Exhibit II-8: Using his farm account book and his balanced checkbook, he must prepare a list of the cash inflow and outflow figures.

A cash flow record permits an important check on the completeness and accuracy of recorded cash transactions. The procedure for trapping errors in the cash account is illustrated by Exhibit II-5, Cash Balance Accuracy Check. But the most important function of a cash flow record is to contribute to timely monitoring and control of the business. To do this, the previous year's cash flow record is used as an important source for a projection of next year's cash flow. Then, with a combination cash flow record and projection (see Exhibit II-8), the manager can gain an extra measure of control over the business through a convenient comparison of expected and achieved results. If the target was missed, what was the reason?

What adjustments in plans and procedures are needed?

A cash flow projection (see the columns labeled "Target" in Exhibit II-8) predicts and schedules cash transactions--usually on a monthly basis for the upcoming year. Its purpose is to show, in advance, where the money will come from to pay expenses as they come due. It adds a forward looking (planning) aspect to a record system.

For the lender, a cash flow projection is a measure of repayment capacity he can use in evaluating a loan and counseling a borrower.

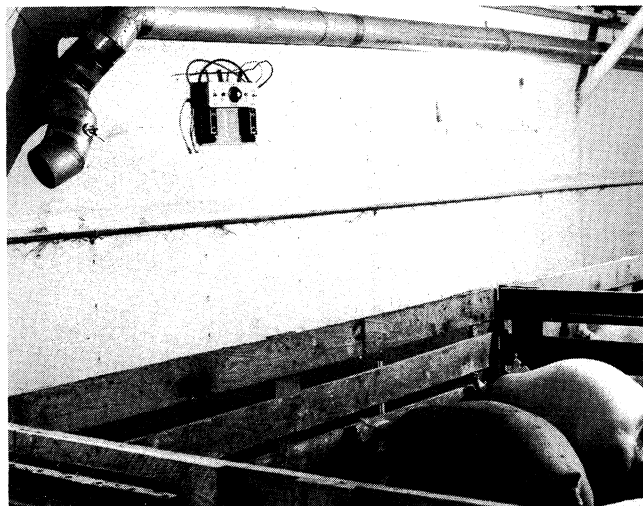
For the hog producer, a cash flow projection can perform the following functions:

1. It permits him to anticipate borrowing needs so he can arrange for credit beforehand and bargain for the best terms.
2. It leads him to estimate the requirements of various production items (e.g., corn, soybean meal, boars) and when he needs them. This often lets him take advantage of volume and seasonal discounts and an advantageous schedule of deliveries.
3. It helps him anticipate cash surpluses so he can plan interest-bearing investments.
4. It acts as a feasibility test for proposed expansion plans and long-term investments. Then the hog producer can prepare financially for the long period between the start of building construction and the sale of hogs, and for the large investment he must make in establishing a normal inventory in a new hog factory. It also helps him avoid loans with unrealistically short payoff periods.

Preparing a Cash Flow Projection. Each manager must go through the agony of

Exhibit II-8. Cash Flow Record and Projection

Item	Annual Data				Monthly Data			
	Previous year	Expected change	Target	Actual	January		February	
					Target	Actual	Target	Actual.
Operating Income								
Capital Sales								
Non-Farm Income								
<u>Total Income</u>								
Operating Expenses								
Capital Purchases								
Payment on Old Debt								
Family and Non-Farm Expense								
<u>Total Expenditures</u>								
<u>Cash Flow Summary</u>								
1. Beginning Checkbook Balance								
2. Total Income (from above)								
3. Total Expenditures (above)								
4. Cash Difference (1 + 2 - 3)								
5. Borrowing Necessary								
(a) Operating Loans								
(b) Intermediate & Long Term								
6. Payments on New Debt								
7. Ending Checkbook Balance								



How might a producer project his expense for LP gas to heat the hog buildings?

preparing performance and price forecasts as a base for his cash flow projections. But the tedium of predicting the quantity needed and the scheduling of purchases is greatly reduced for a producer with a relatively stable business and a set of historical cash flow records. In fact, some computerized systems automatically project last year's cash flow record as next year's target after giving the user an opportunity to make adjustments.

The first three columns of Exhibit II-8 encourage you to apply a percentage adjustment to last year's figure to arrive at a target for next year. For instance, how might a producer project his expenses for L.P. gas to heat the hog buildings? Assume that last year's L.P. bill was \$3,000 and that a 15% price rise is expected. The annual target for the coming year will then be \$3,450. Then, if he had a monthly cash flow record for earlier years, he could distribute the targeted annual total across months according to previous experience. For instance, assume his records tell our example producer to expect a fuel bill distribution of: 14% each in January, February, March, and December; 9% each in April, May, and November; 5% each in June and October;

and 2% each in July, August, and September.

The relatively simple procedures of indexing according to prices and distributing across months according to experience is not likely to be adequate treatment for every item in the cash flow projection. For some items, you must make other adjustments because of such things as: 1) changes from other years in the beginning inventories of feed, animals, and supplies; 2) changes in the acreage of various crops and the number of hogs to be produced; 3) changes in production practices and schedules. And for newly established businesses, there will be no record of previous performance on which to base any of the projections. Before a cash flow projection can be prepared for these problem items and farms, schedules¹⁰ will have to be developed for hog production, crop production, capital investments, and for the use of crop and livestock supplies, feed, and labor.

Exhibit II-8. Predesigned forms for developing cash flow statements are readily available from agricultural colleges, lending agencies, accounting firms, and record-keeping services. In addition, there are a variety of computer software packages that print cash flow reports. Exhibit II-8 is intended to illustrate some ideas worth considering in either choosing or designing a format for a cash flow record and projection.

To conserve space, Exhibit II-8 is an abbreviated version of a cash flow statement. A complete statement using the Exhibit II-8 format has 28 columns and approximately 65 lines.

¹⁰ Worksheets for developing these schedules are provided in North Central Regional Extension Publication 34, op. cit., or in Coordinated Financial Statements for Agriculture, Frey and Klinefelter, op. cit.

The Columns. At the beginning of each year, complete the first three columns and the "Target" column for each month according to the discussion in the previous section, "Preparing a Cash Flow Projection." Then, at the end of each month, and at the end of the year, the "Actual" data would be entered in the appropriate column. Cash flow projections are often prepared with much agony and then ignored. The side-by-side presentation of the projection ("Target") and the realization ("Actual") should help solve that problem. If the business is not performing according to plan, the manager is alerted and prompted to take action.

The Lines (Items). An important subdivision under "Operating Income" will be a line set aside to record the projection and subsequent record of cash income from the sale of market hogs. For an idea to help you develop some precision in forecasting the number of hogs you intend to sell, see Report V-3, Market Hog Inventory Control and Sales Projection, in EC-600, Inventory Control, Communication, and Scheduling Records. Separate lines may also be needed for the following subdivisions of "Operating Income": Crops, Other livestock, Livestock products, Government payments, Patronage dividends, Custom work.

"Capital Sales" will include: Breeding livestock, Machinery and equipment, Buildings, land. Provide separate lines on the cash flow statement for each.

"Non-Farm Income" will include any funds from nonfarm sources made available to the farm business. Separate lines should be allocated for: Wages, Gifts and inheritance, Inflows from savings, Interest and dividends, Rent.

Under "Operating Expenses," provision should be made for a separate listing of each expense item identified on Internal Revenue Service Schedule F (Form 1040), Farm Income and Expenses. There are two exceptions to the rule of adopting the

Schedule F expense categories: 1) Although interest is an item on the Schedule F list of operating expenses, do not list it here. It is listed in another section of the cash flow report. 2) Expenditures for feeder livestock are missing from the Schedule F list of expenses. On Schedule F these are subtracted from receipts for feeder livestock; they should be listed here.

Since every farmer prepares a Schedule F, anyone who has been in business will have a record of the 21 categories of cash expense listed there. They can use those data as a base to project cash operating expense. For some producers, the Schedule F breakdown will not have sufficient detail. For instance, instead of Schedule F's single category labeled "Feed Purchases," it may be very helpful to have separate listings for: Grain, Soybean meal, Premix, and Complete feed.

You should subclassify "Capital Purchases" as: Breeding animals, Machinery and equipment, Buildings and improvements, and Land and improvements.

Divide "Payment on Old Debt" into principal and interest payments on any debt obligations carried over from previous years.

"Family and Non-farm Expense" should list each category of cash withdrawal from the farm business. Some likely categories are: Family living, Income tax and social security, Outflows to saving and investment.

"Cash Flow Summary." There are many ways to arrange a cash flow statement. This one is designed to focus on the need for borrowing (line 5).

FARM BUSINESS ANALYSIS

This publication thus far has dealt with the records needed to file the federal income tax and to manage finances. Unfortunately, unsupported cash-basis tax records have very little value as a

Table II-1.

Statistics Describing Indiana Hog Farms: 1982

	Small Farms	Large Farms	Your Farm
Number of Farms Reporting	20	20	1
Capital Investment	\$835,730.	\$2,260,900.	
Total Cash Receipts	\$196,097.	\$683,728.	
Hog Receipts	\$130,586.	\$521,506.	
Total Cash Expenses	\$149,652.	\$476,727.	
Net Inventory Change	\$20,371.	\$90,408.	
Unpaid Family Labor	\$2,050.	\$416.	
Farm Income	\$64,766.	\$296,993.	
Labor Income	\$22,979.	\$183,949.	
Rate Earned on Investment	4.5%	10.1%	
Value of Land & Buildings Per Acre	\$1,741.	\$1,859.	
Size of Farm (acres)	378	928	
Tillable Acres	327	842	
Percent Tillable Land in Row Crop	87%	94%	
Corn Yield (bu. per acre)	137 bu.	152 bu.	
Value of Crops per Tillable Acre	\$272.	\$319.	
Value of Fertilizer per Tillable Acre	\$41.	\$57.	
Value of Feed Fed	\$79,415.	\$246,062.	
Livestock Receipts per \$1.00 Feed	\$1.92.	\$2.31.	
Number of Sows	96	343	
Number of Litters	149	576	
Pigs Weaned per Litter	7.5	7.8	
Total Number Hogs Raised	958	4044	
Productive Man Work Units per Farm	500	1619	
Productive Man Work Units per Man	268	469	

tool for business management. Since they ignore inventory changes, they do not even provide a useful measure of profitability. However, when the basic tax records are supplemented with an inventory; a record of loans; and a record of gifts, inheritances, and other additions and withdrawals of capital, you can develop the financial statements diagrammed in Exhibit II-3. With these, the data are available to perform some powerful financial and business management analysis:

1. The classification and listing of assets and liabilities on a net worth statement permit the calculation of the various ratios recommended by the financial profession. These are used to examine liquidity, debt structure, and leverage. The net worth figure itself is a measure of solvency.

2. With a statement of change in financial position and a double-column (cost basis and market value) net worth statement, you can identify the sources of net worth growth: earnings retained in the business, or inflation, or gifts and inheritance.

3. The income statement, which is an accrual record because it reflects inventory changes, is a reliable record of profitability.

4. The cash flow record shows the ability of the business to meet financial obligations. The projection is an evaluation of borrowing and repayment plans.

But having done all of these things, the farm business manager is likely to feel the need for other measures of business performance. A good source of a system of analysis is your state agricultural college. In each of the states where agriculture is important, the land grant university can be expected to be involved with a farm record project. These universities have developed a fairly uniform set of measures of farm business performance for the projects. For instance, cooperators in the Indiana

(Purdue University) farm record project receive a Farm Business Analysis report which includes about 220 separate items chosen to help evaluate business performance. The 220 statistical items include: 1) the amount of cash farm income from each source, 2) categories and dollar amounts of expenditures, 3) measures of investment and change in investment, 4) measures of profitability, 5) measures of volume, yield, and mix of crops, 6) measures of size and performance of livestock enterprises, 7) measures of efficiency in the use of labor, capital, and machinery. A small sample of the 220 items is presented in Table II-1.

Cooperating producers use these statistics to monitor changes in performance of their business over time. In addition, as suggested by the blanks in the right-hand column of Table II-1, any Indiana hog producer is encouraged to compare his data with others who have comparable units.

Producers should seriously consider joining a record association that develops uniform farm business performance data and encourages comparison with others. In evaluating accounting systems and computer software, consider the possibility of generating data from the reports that you can compare with printed performance measures from the state extension service.

Another major tool of business evaluation is enterprise accounting. EC-598, Cost of Production Records, is devoted to the development of hog enterprise records. Enterprise analysis involves departmentalizing the business so you can examine performance of the hog department, or the corn department, or the beef department. Rather than comparing your business with others, emphasis here is usually on a comparison between enterprises or departments and on an analysis of the performance of a particular enterprise over time (comparing performance of your hogs in 1982 with 1981).

Historic Document

NEW 1/84

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